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10/599,220	10/06/2008	Hans-Dieter Heining	HEINING	5964

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EXAMINER	
MOK, ALEX W	
ART UNIT	PAPER NUMBER
2834	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/599,220	HEINING, HANS-DIETER	
	Examiner	Art Unit	
	ALEX W. MOK	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/23/07, 10/16/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 11, 12, 20, 23, 24, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al. (US Patent No.: 4431931) in view of Gertmar et al. (WIPO Document No.: WO 00/67355).

For claim 11, Perrier et al. discloses the claimed invention comprising: a rotor (reference numeral 7, figure 1); a hollow shaft (reference numeral 6) connected to the rotor and having an interior hollow space (see figure 1); and a power supply (reference numeral 14) for supply of electric energy to the electric motor, said power supply being integrated entirely in the hollow space of the hollow shaft and stationarily mounted within the hollow space (figure 1). Perrier et al. do not specifically disclose the rotor being an internal rotor, or the power supply including a converter and an electronic control circuit operatively connected to the converter.

Gertmar et al. disclose an internal rotor (reference numeral 7, see the figure), and a converter (reference numeral 4) and circuit being connected to the converter (see the figure).

It would have been obvious to include the rotor, converter, and circuit as disclosed by Gertmar et al. in the invention of Perrier et al., since the invention of

Gertmar et al. is related to speed, power, etc. of the device (page 10, lines 33+), the same technological field of the claimed invention, and a person of ordinary skill would have been able to include the technique of Gertmar et al. as this would further reduce the required installation space for the motor.

For claim 23, the inventions of Perrier et al. and Gertmar et al. teach the claimed structure of the invention as explained for claim 11 above, and the recitation of "A machine-tool or production machine..." in the preamble has not been given patentable weight. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

For claims 12 and 24, Perrier et al. disclose a bearing shield (reference numeral 2) for attachment of the converter (see figure 1).

For claims 20 and 32, Perrier et al. disclose fan blades (reference numeral 15) attached to an inside surface of the hollow shaft (see figure 1).

3. Claims 13, 14, 19, 25, 26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al. and Gertmar et al. as applied to claims 11 and 23 above, and further in view of Dukart et al. (German Patent Document No.: DE 10118052).

For claims 13 and 25, Perrier et al. and Gertmar et al. teach the claimed invention except for a transducer integrated in the hollow space within the hollow shaft. Dukart et al. disclose a sensor (reference numeral 24), i.e. transducer, integrated in the hollow space of the shaft (reference numeral 12, see figures 1.1-1.3), and it would have been obvious to include this configuration of Dukart et al. in the inventions of Perrier et al. and Gertmar et al. since the invention of Dukart et al. is related to sensing elements for rotation (see English Abstract), the same technological field as the claimed invention, and this would provide a space saving configuration for rotation monitoring in the motor.

For claims 14 and 26, Perrier et al. and Gertmar et al. disclose the claimed invention except for the transducer having at least one signal track arranged on an inside surface of the hollow shaft. Dukart et al. disclose a signal track (reference numeral 26) inside the shaft (see figures 1.1-1.3), and it would have been obvious to include the signal track of Dukart et al. in the inventions of Perrier et al. and Gertmar et al. since this would provide proper signals for sensing purposes in the motor.

For claims 19 and 31, Perrier et al., Gertmar et al., and Dukart et al. teach the claimed invention except for the transducer having an electronic evaluation circuit partially or completely integrated in the hollow space within the hollow shaft. Gertmar et al. do teach a circuit being integrated within the portion of the shaft (reference numeral 3, see the figure), and it would have been obvious to include this circuit configuration of Gertmar et al. for the transducer in the inventions of Perrier et al., Gertmar et al., and

Dukart et al. since this configuration would further provide reductions in motor installation space for a person of ordinary skill.

4. Claims 15 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al., Gertmar et al., and Dukart et al. as applied to claims 13 and 25 above, and further in view of Tsuboi et al. (US Patent Application Pub. No.: US 2001/0054851 A1).

For claims 15 and 27, Perrier et al., Gertmar et al., and Dukart et al. disclose the claimed invention except for the transducer being a magnetic transducer. Tsuboi et al. disclose a magnetic sensor (see the Abstract), and it would have been obvious to include this magnetic transducer of Tsuboi et al. in the inventions of Perrier et al., Gertmar et al., and Dukart et al. since the invention of Tsuboi et al. is related to saving space for the motor (see paragraph [0040]), the same field of endeavor as the claimed invention, and such a technique would provide a skilled person in the art with proper sensing capabilities.

5. Claims 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al., Gertmar et al., and Dukart et al. as applied to claims 13 and 25 above, and further in view of Maucher et al. (US Patent No.: 4626696).

For claims 16 and 28, Perrier et al., Gertmar et al., and Dukart et al. teach the claimed invention except for the transducer being an inductive transducer. Maucher et al. disclose an inductive transducer (see column 12, lines 15-20), and it would have

been obvious to include the inductive transducer as taught by Maucher et al. in the inventions of Perrier et al., Gertmar et al., and Dukart et al. since the invention of Maucher et al. is related to saving space for the device (see column 2, line 64-column 3, line 2), the same field of endeavor as the claimed invention, and such a technique would provide a skilled person in the art with proper sensing capabilities.

6. Claims 17 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al., Gertmar et al., and Dukart et al. as applied to claims 13 and 25 above, and further in view of Magnussen et al. (US Patent Application Pub. No.: US 2002/0050765 A1).

For claims 17 and 29, Perrier et al., Gertmar et al., and Dukart et al. disclose the claimed invention except for the transducer being an optical transducer. Magnussen et al. disclose optical sensors (see paragraph [0446]), and it would have been obvious to include the optical transducer as taught by Magnussen et al. in the inventions of Perrier et al., Gertmar et al., and Dukart et al. since the invention of Magnussen et al. is related to reducing the required space for device components (see paragraph [0288]), the same field of endeavor as the claimed invention, and such a technique would provide proper sensing capabilities for a skilled person in the art.

7. Claims 18 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al., Gertmar et al., and Dukart et al. as applied to claims 13 and 25 above, and further in view of Ladabaum (US Patent No.: 6562650).

For claims 18 and 30, Perrier et al., Gertmar et al., and Dukart et al. disclose the claimed invention except for the transducer being a capacitive transducer. Ladabaum discloses a capacitive transducer (see column 1, lines 32-35), and it would have been obvious to include this capacitive transducer as taught by Ladabaum in the inventions of Perrier et al., Gertmar et al., and Dukart et al. since the invention of Ladabaum is related to reducing the required space for the device components (see column 4, line 65-column 5, line 4), the same field of endeavor as the claimed invention, and such a technique would provide proper sensing capabilities for a person of ordinary skill.

8. Claims 21 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al. and Gertmar et al. as applied to claims 11 and 23 above, and further in view of Kalman et al. (US Patent Application Pub. No.: US 2002/0089864 A1).

For claims 21 and 33, Perrier et al. and Gertmar et al. disclose the claimed invention except for the converter being implemented as a converter without an DC-link capacitor. Kalman et al. disclose a converter without a DC link capacitor (see paragraphs [0008-0009]), and it would have been obvious to include this converter of Kalman et al. in the inventions of Perrier et al. and Gertmar et al. since Kalman et al. disclose the DC link capacitor to be large and heavy and it would be beneficial to eliminate this component (see paragraphs [0004-0007]), and applying this technique would provide a person of ordinary skill with a space saving configuration for the motor.

9. Claims 22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrier et al. and Gertmar et al. as applied to claims 11 and 23 above, and further in view of Loddenkotter (US Patent Application Pub. No.: US 2003/0102506 A1).

For claims 22 and 34, Perrier et al. and Gertmar et al. disclose the claimed invention except for the converter being implemented as a matrix converter. Loddenkotter discloses a matrix converter (see the Abstract), and it would have been obvious to include this converter of Loddenkotter in the inventions of Perrier et al. and Gertmar et al. since the invention of Loddenkotter is for providing a space-saving configuration for the device (see paragraph [0008]), the same field of endeavor as the claimed invention, and applying the teachings of Loddenkotter would reduce the needed space for the installation of the motor components.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose embodiments of converter/sensor configurations: US 4472649 A (Namba; Masanao et al.), US 20040135473 A1 (Byers, Charles L. et al.), US 20030164649 A1 (Cheng, Tung Choi), US 6078120 A (Casaro; Fausto et al.), US 5385007 A (Hartel; Robert et al.), US 4458156 A (Maucher; Paul et al.), US 20030122438 A1 (Winkel, Casey R. et al.), US 20030137219 A1 (Heiligensetzer, Peter et al.), US 7696671 B2 (Sawada; Yukihiko et al.), US 6992407 B2 (Kano; Yoshio et al.), US 20030112643 A1 (Salama, Mikko), US 20030127939 A1 (Lungu, Iancu).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX W. MOK whose telephone number is (571)272-9084. The examiner can normally be reached on 7:30-5:00 Eastern Time, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen P. Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

/A. W. M./
Examiner, Art Unit 2834